

# Thrane & Thrane A/s

Option 004  
Free-Signal Generation

Reference Manual

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Tobaksvejen 23, DK-2860 Soeborg, Denmark

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## Option 004 Free-Signal Generation Reference Manual

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Your CW-identifier .....





Specifications

|                        |   |  |
|------------------------|---|--|
| Free-Signal<br>Format  | : | Four 1.5 sec. Dot-Pattern sequences<br>and one CW-Identifier sequence with<br>approx. 1 sec. pause between<br>sequences. |
| Free-Signal<br>Control | : | Manual enabling/disabling, with<br>automatic interruption of Free-<br>Signal during traffic periodes<br>(if enabled).    |
| Tone<br>Programming    | : | Equals the standard 50 Baud<br>tone frequencies, adjustable from<br>800 Hz to 3 kHz.                                     |
| Modulation             | : | Phase-continuous AFSK keying.  |
| Output Level           | : | +10 dBm to -30 dBm / 600 ohm,<br>continuously adjustable.  |

Your CW-identifier .....





## INTRODUCTION

This manual provides instructions for installing and operation of the Option 004, Free-Signal Generation.

The Option 004 enables the Model TT-1555C/E with Option 003 (100 Baud) to operate with automatic Free-Signal Generation during idle conditions (standby condition), both with the standard 30 Baud character speed as well as with the Teletype standard 100 Baud character speed.

General service information are covered by the Option 003, 100 Baud Radiotelex Reference Manual.



## INTRODUCTION

This manual provides instructions for installing and operation of the Option 004, Free-Signal Generation.

The Option 004 enables the Model TT-1585C/E with Option 005 (100 Baud) to operate with automatic Free-Signal Generation during idle conditions (Standby condition), both with the standard 50 Baud character speed as well as with the Twinplex modulated 100 Baud character speed.

General service informations are covered by the Option 005, 100 Baud Radiotelex Reference Manual.





## DESCRIPTION

Model TT-1585C/E, Opt. 004/005 is compatible with existing ARQ systems, CCIR Rec. 476-3 and Rec. 625.

All features found in the standard Modem TT-1585C and TT-1585E are maintained, adding the facility to generate Free-Signal transmissions during idle conditions.

This Free-Signal transmission enables the outstations to detect the transmission status on the communication link and, initiate automatic call when the Free signal is detected (standard on Model TT-1585C, TT-1585E and TT-3210A).

The Free-Signal generation may be enabled/disabled by the operator.

If enabled, the idle Radiotelex Modem continuously transmits the format of the Free-Signal. When a incoming call is detected as a valid call or when the operator enables an outgoing call, the Free-Signal generation is temporary interrupted and the Radiotelex Modem will serve the call. After call termination the Free-Signal generation automatically reverts to the active state.

During Free-Signal transmission, the transmit control outputs remains passive (high impedance state).

The Free-Signal format consists of four 1.5 sec. dot-pattern sequences and one CW-identifier sequence with approx. 1 sec. pause between sequences.

The CW-identifier sequence is preprogrammed from factory.

The Free-Signal is generated by the slave-modem board in the Radiotelex Modem, enabling the main-modem to detect incoming calls out of synchronism with the Free-Signal transmission timing.

The Free-Signal transmission Mark- and Space frequencies equals the programmed 50 Baud tones, and may be adjusted from 1 kHz to 3 kHz with 1 Hz resolution.





## INSTALLATION

## Software Installation

To install the Option 004, proceed as follows (for installation of the Option 005, please refer to the Option 005 Reference Manual):

1. Remove power from the TT-1585 and disconnect the mains power cable.
2. Remove the TT-1585 top cover, by unscrewing the four screws holding the top cover.
3. Remove original PROM(s) from the main modem PC Board, and install the new PROM(s) supplied with option 004 kit.

## W A R N I N G

-----

Special attention should be used when removing original PROM's and installing new PROM's, in order not to destroy the leads on the chip. Removing original PROM's may be facilitated by carefully releasing the PROM's by keying a screwdriver in between the PROM's and the sockets.

When installing new PROM's, pay attention to that all chip-leads have been located properly in the socket and that the new PROM's is oriented correctly.

-----

4. Connect the mains power cable to the TT-1585, and switch the modem "on".



5. Perform new "System Generation" (as described in the Operators Manual, section 9).
6. Reinstall the TT-1585 top cover.





## OPERATION

## Introduction

The following section describes the additional operational commands introduced with the Option 004, Free-Signal Generation.

## FREE ON / FREE OFF

The FREE command is used to enable/disable the automatic transmission of Free-Signals.

To enable the Free-Signal transmission, type:

FREE (cr)

or

FREE ON (cr)

To disable the Free-Signal transmission, type:

FREE OFF (cr)

Enabling/disabling the Free-Signal is not affected by Power-failures.

## STAT

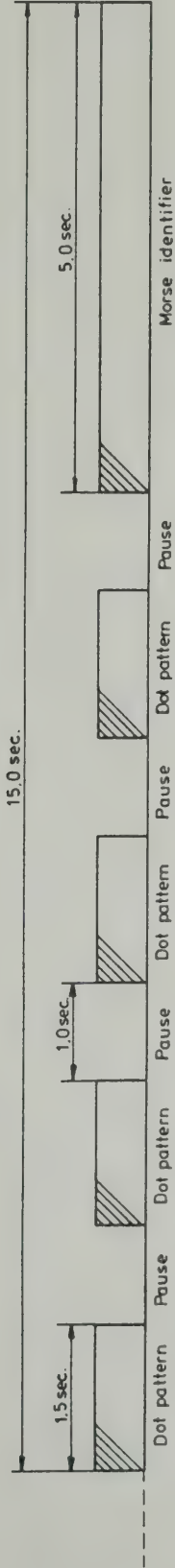
The general status command includes the status of the Free-Signal transmission.



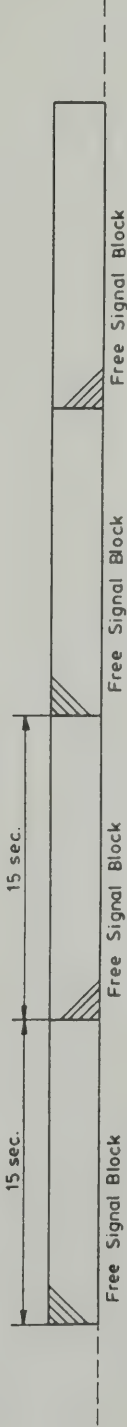


1.

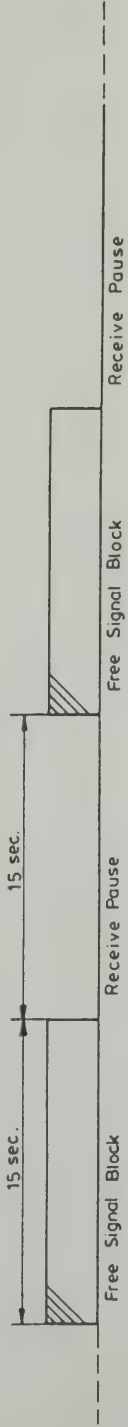
Free Signal Block (15 sec):



Free Signal Generation (Duplex):



Free Signal Generation (Simplex):



Notes:

Dot pattern : Alternating Mark/Space tones ( 10ms )

Morse identifier: Space tone Morse ( Speed 12 )

|   |  |                              |  |                |  |  |  |
|---|--|------------------------------|--|----------------|--|--|--|
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN MILLI-<br>METRES AND TOLERANCES ARE IN<br>ACCORDANCE WITH BS 2075 |  | DR. <i>Kiraden</i>           |  | 850320         |  | Thrane & Thrane A/s<br>Telecommunications Engineering Copenhagen Denmark |  |
| ANGLES<br>LIN DIM.  |  | CH.                          |  | AP.            |  | TITLE<br>FREE SIGNAL GENERATION  |  |
| MATERIAL  |  | AP.                          |  | AP.            |  | SIZE<br>A 3  |  |
| NEXT ASSY   |  | USED ON                      |  | CODE IDENT NO. |  | DRAWING NO.<br>93 - 100243   |  |
| APPLICATION   |  | FIRST<br>ANGLE<br>PROJECTION |  | SCALE          |  | SHEET 1 OF 1   |  |













